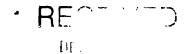


SEQUENCE LISTING



```
<110> Tsichlis, Philip
Grimes, Leighton H
Zweidler-McKay, Patrick
```

- <120> NUCLEIC ACID MOLECULE FOR ENHANCING GENE EXPRESSION
- <130> FCCC96-11
- <140> US 09/202,549
- <141> 1999-10-12
- <150> PCT/US97/10486
- <151> 1997-06-17
- <150> US 60/019,808
- <151> 1996-06-17
- <160> 70
- <170> PatentIn version 3.1
- <210> 1
- <211> 12
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Gfi-1 binding sequence
- <220>
- <221> misc_feature
- <222> (1)..(1)
- <223> "n" is any nucleotide
- <220>
- <221> misc_feature
- <222> (9)..(9)
- <223> "n" is any nucleotide
- <400> 1
- naaatcacng ca

12

- <210> 2
- <211> 12
- <212> DNA
- <213> Artificial Sequence

```
<220> .
<223> Gfi-1 binding sequence
< 220 >
<221> misc_feature
<222> (9)..(9)
<223> "n" is "t" or "a"
<400> 2
                                                                         12
taaatcacng ca
<210> 3
<211> 12
<212> DNA
<213> Artificial Sequence
<220>
<223> An expression reulatory DNA segment
<220>
<221> misc feature
<222> (1)..(1)
<223> "n" is any nucleotide
<220>
<221> misc_feature <222> (3)..(3)
<223> "n" is any nucleotide
<220>
<221> misc feature
<222> (4)..(5)
<223> "n" is "g" "c" or "t", or is absent, or is an oligonucleotide of
       two or more nucleotides
<220>
<221> misc_feature
<222> (6)..(6)
<223> "n" is "a" "g" or "c", or is absent, or is an oligonucleotide of
       two or more nucleotides
<220>
<221> misc_feature
<222> (9)..(9)
<223> "n" is "a" "g" or "c", or is absent, or is an oligonucleotide of
       two or more nucleotides
<400> 3
nannnnacng ca
                                                                         12
<210> 4
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Gfi-1 binding sequence
```

<220>		
<221>	misc_feature	
<222>	(2)(2)	
<223>	"n" is "a" or "c"	
<220>		
<221>	misc_feature	
<222>	(7)(7)	
<223>	"n" is "inosine" or "c"	
<220>		
	misc_feature	
	(15)(15)	
<223>	"n" is "a" or "t"	
< 400>	4	
anaaaa	naaa tcacngcata tgcc	24
210		
<210>		
<211>		
<212>		
<2135	Artificial Sequence	
<220>		
	Gfi-1 binding sequence	
\22J/	off I binding sequence	
<400>	5	
	acca cataaatcac tgcctatcct gtg	33
<210>	6	
<211>	33	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding oligonucleotide	
< 400>		2.2
accatc	acca cataaatcac tgcctatcct gtg	33
<210>	7	
<211>	24	
<211>	DNA	
<213>	Artificial Sequence	
\L.1.J./	Artificial bequence	
<220>		
<223>	Gfi 1 binding oligonucleotide	
<400>	7	
	atag atcactgcct atcc	24

<210> 8

<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding oligonucleotide	
<400>	8	
caccac	rataa eteaetgeet atee	24
<210>	a	
<211>		
<212>		
<113>	Artificial Sequence	
<220>	Ofi 1 hinding oligonyalootida	
<5113>	Gfi-1 binding oligonucleotide	
< 1005	9	
caccac	ataa ataactgoot alee	24
<210>	1.0	
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<2235	Gfi-1 binding oligonucleotide	
<400>	10	
caccac	ataa alcaatgoot atoo	24
<210>	11	
<211>		
<211>		
	Artificial Sequence	
<220>		
	Gfi-1 binding oligonucleotide	
<400>	11	
	ataa atcacttcct atcc	24
<210>		
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>		
goodgo	ctgg rtgaccgccc aacgaccccc cgggattyac gtcaataatg acgtatgttc	60

		•				
ccatagtaac	gccaataggg	actttccatt	gacgtcaatg	ggtggagtat	ttacggtaaa	120
etgeceaett	ggcagtacat	caagtgtatc	atatgccaag	tacgccccct	attgacgtca	180
atgacggtaa	atggcccgcc	tggcattatg	cccagtacat	gaccttatgg	gactttccta	240
cttggcagta	catctacgta	ttagtcatcg	ctattaccat	ggtgatgcgg	ttttggcagt	300
acatcaatgg	gcgtggatag	cggtttgact	cacggggatt	tccaagtctc	caccccattg	360
acgtcaatgg	gagtttgttt	tggcaccaaa	atcaacggga	ctttccaaaa	tgtcgtaaca	420
actccgcccc	attgacgcaa	atgggcggta	ggcgtgtacg	gtgggaggtc	tatataagca	480
gagctcgttt	agtgaaccgt					500
<220>	ificial sequ -1 binding s					
<400> 13	ctaaccacc	aacgaccccc	caaastasc	atcaataata	acqtatqttc	60
		actttccatt				120
		caagtgtatc				180
		tggcattatg				240
		ttagtcatcg				300
		cggtttgact				360
acgtcaatgg	gagtttgttt	tggcaccaaa	ctcaacggga	ctttccaaaa	tgtcgtaaca	420
actccgcccc	attgacgcaa	atgggcggta	ggcgtgtacg	gtgggaggtc	tatataagca	480
gagctcgttt	agtgaaccgt					500
<210> 14 <211> 500						
<212> DNA <213> Arti	ificial Sequ	ience				
<220><223> Gfi-	·1 binding s	sequence				
<400> 14	at as a as a s				.aakakaka	60

geneghetgg etgaeegeee aacgaeeeee egggattgae gteaataatg aegtatgtte

ccatag	taac	gccaataggg	actticcatt	gacgtcaatg	ggtggagtat	ttacggtaaa	120
ctgccc	actt	ggcagtacat	caagtgtatc	atatgccaag	tacgccccct	attgacgtca	180
atgacg	gtaa	atggcccgcc	tggcattatg	cccagtacat	gaccttatgg	gactttccta	240
cttggc	agta	catctacgta	ttagtcatcg	ctattaccat	ggtgatgcgg	ttttggcagt	300
acatca	atgg	gcgtggatag	cggtttgact	cacgggactt	tccaagtctc	caccccattg	360
acgtca	atgg	gagtttgttt	tggcaccaaa	actaacggga	ctttccaaaa	tgtcgtaaca	420
actccg	cccc	attgacgcaa	atgggcggta	ggcgtgtacg	gtgggaggtc	tatataagca	480
gagete	gttt	agtgaaccgt					500
<213>		iticial Sequ -1 binding s					
<400>	15		1				
caaatc	aata	ac					12
<220>		ificial Sequ					
<223>	Gfi-	-1 binding s	sequence				
<400> taaatc	16 tgtg	tg					12
<210><211><211><212><213>	17 12 DNA Arti	ificial Sequ	ıence				
<220> <223>	Gfi-	-1 binding s	sequence				
<400> gaaatca	17 agtt	aa					12
<210>	18 12						

<212 > DNA

<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
	18	12
yadatt	agac ca	12
<210>	19	
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>	19	
gaaatc	agtt aa	12
<210>	20	
<211>		
<212>	DNA	
<213>	Artificial Sequence	
.220-		
<220> <223>	Gfi-1 binding sequence	
<400>	20	
	actg to	12
Juaco		
<210>	21	
	12	
<212>	Artificial Sequence	
(213)	Artificial bequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>	21	
aaaatc	actg tt	12
<210>	22	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
.223/	or raing bequence	
< 400>	22	
aaaatc	agaa aa	12

<212>	23 12 DNA Artificial Sequence	
<220> <223>	Gfi-1 binding sequence	
<400> taaatc	23 tttg tt	12
<211> <212>		
<220><223>	Gfi-1 binding sequence	
<400>	24 tgtg tt	12
<210><211><211><212><213>	12	
<220> <223>	Gfi-1 binding sequence	
	25 taag tt	12
<211>	26 12 DNA Artificial Sequence	
	Gfi-1 binding sequence	
<400> taaatca	26 Baag tt	12
<212>	27 12 DNA Artificial Sequence	
<220><225>	Ofi 1 binding sequence	

	27	1 7
gaaatc	agta gt	12
<210>	28	
<211>		
<212>		
	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
< 400>	28	
aaaatc	tgag ct	12
< 210 >		
<211>		
<212>		
<213>	Artificial Sequence	
000		
<220>	Cfi 1 hinding goguenge	
<223>	Gfi-1 binding sequence	
<400>	29	
	agac ee	12
cadacci		
<210>	30	
<211>		
<212>		
	Artificial Sequence	
	•	
<220>		
<223>	Gfi-1 binding sequence	
<400>	30	
caaatc	agac aa	12
010		
<210>	31	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
(223)	GIT-I DINGING Sequence	
< 400>	31	
	ctag gc	12
		_
<210>	32	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	

<220><223>	Gfi-1 binding sequence	
	32 ctqg gt	12
<210><211>	12	
<212> <213>	Artificial Sequence	
<220> <223>	Gfi-1 binding sequence	
	33	
ttaatc	acgg tt	12
<210>		
<211><212>		
	Artificial Sequence	
220		
<220> <223>	Gfi-1 binding sequence	
<400>		12
Caaacc	egag tt	12
-010-	25	
<210><211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>	35	
	ttag ca	12
<210>	36	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>	Artificial Sequence	
~ J J J J ~	•	
<223>	•	
<400>	Gfi-1 binding sequence	
<400>	Gfi-1 binding sequence	12
<400>	Gfi-1 binding sequence	12
<400>	Gfi-1 binding sequence 36 accc tg	12

	:212>		
		Artificial Sequence	
	:220>		
		Gfi-1 binding sequence	
	:400>	37	
C	caaatci	ttag ca	12
	210	20	
	<210>		
`			
	<212>		
<	<213>	Artificial Sequence	
<	<220>		
<	:223>	Gfi-1 binding sequence	
·:	<400>	38	
Q	gaaatca	accc tg	12
<	<210>	39	
	<211>		
	:212>		
<	<213>	Artificial Sequence	
<	<220>		
<	<223>	Gfi-1 binding sequence	
_	400>	39	
			12
<	<210>	40	
	<211>		
	212>		
<	:213>	Artificial Sequence	
<	:220>		
<	:223>	Gfi-1 binding sequence	
<	(400>	40	
9	gaaatca	aggo ca	12
<	210>	41	
	:111>		
	212>		
<	:213>	Artificial Sequence	
4"	220>		
<	.223>	Gfi-1 binding sequence	

<400>	. 41	
caaatc	atac tt	12
<210>	42	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
< 400>	42	
caaatc	aggg ct	12
<210>		
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
	43	
caaatc	cccg cc	12
0.3.0		
<210>	44	
.011.	12	
<211>		
<212>		
<5113>	Artificial Sequence	
<220>		
	Gfi-1 binding sequence	
(22)	GIT-I Dinuting sequence	
<400>	4.4	
	agtc ag	12
Caaacc	agec ag	1.2
<210>	45	
<211>	12	
<212>	DNA	
	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>	45	
ctaalca	attg tc	12
<210>	46	
<211>	12	
<212>	DNA	

•			
< 2 1 3 >	Artificial Sequence		
<220>			
	Gfi-1 binding sequence		
<400>	1.5		
	cagag gg		12
5	3 3 33		
<210>	17		
<211>			
<212>			
<213>	Artificial Sequence		
<220>			
	Gfi-1 binding sequence		
	47		1.0
caaato	ccggg tc		12
0.1.0			
<210><211>			
<212>			
	Artificial Sequence		
<220>			
	Gfi-1 binding sequence		
<400>	10		
	cagag ag		12
J			
<210>	49		
<211>			
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Gfi-1 binding sequence		
<400>	49		
	cactc cc		12
<210>	50		
<211>	12		
<212>			
<213>	Artificial Sequence		
<220>			
<223>	Gfi-1 binding sequence		
< 400>	50		
	cacag to		12
	~		

<210>	51
<211>	
<212>	
	Artificial Sequence
<220>	
	Gfi-1 binding sequence
1223	orr r armarng coduction
<400>	51
	acag ga
ggaacc	acag ga
<210>	52
<211>	
<212>	
	Artificial Sequence
1213.	or a restauration of the second of the s
<220>	
	Gfi-1 binding sequence
(223)	orr r britaing bequeitee
<400>	52
	atcg ca
24466	
<210>	53
<211>	
<212>	
	Artificial Sequence
	1
<220>	
	Gfi-1 binding sequence
	<u> </u>
<400>	53
aaaatc	aggg ga
<210>	
<211>	
<212>	
<213>	Artificial Sequence
<220>	
<223>	Gfi-1 binding sequence
< 400 >	
gaaatc	agac cc
<210>	55
<211>	12
<212>	
<213>	Artificial Sequence
<220>	
<: 223 >	Gfi-1 binding sequence
<400>	55

aaaatc	agta aa	
<210>	5.6	
<211>		
<212>		
	Artificial Sequence	
<220>		
	Gfi-1 binding sequence	
< 400>	56	
gaaatc	aggc ca	
<210>	57	
<211>	12	
<212>		
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>		
aaaatc	agta aa	
<210>		
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
	Gfi-1 binding sequence	
<400>	58	
caaatc	tcag tt	
<210>	59	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
< 400>	59	
ccaatc	acag ga	
<210>	60	
<211>	12	
<212>		
<213>	Artificial Sequence	
<020>		

<223>	Gfi-1 binding sequence	
<400>	60	
aaaato	caaag ca	
<210>	61	
<211>		
<212>		
<213>	Artificial Sequence	
<220>		
	Gfi-1 binding sequence	
	61 caggg aa	
ccaacc	aggg au	
<210>	62	
<212>		
	Artificial Sequence	
<220><223>	Gfi-1 binding sequence	
1	ori i zimaing bequence	
<400>	62	
aaaatc	caacg gg	
<210>	63	
<211>		
<012>		
<13>	Artificial Sequence	
<220>		
<223>	Gfi-1 binding sequence	
<400>	63	
	ecceg tg	
<210>	64	
<211>	12	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
.000	CFI 1 hinding games	
<223>	Gfi-1 binding sequence	
< 4005	<u>64</u>	

gaaacc	accg tg	12
<211><211>		
<220><223>	Gfi-1 binding sequence	
<400> gaaato	65 eccag ta	12
<211><212>	66 12 DNA Artificial Sequence	
<223>	Gfi-1 binding sequence	
	66 acgg ac	12
<211><211>	67 12 DNA Artificial Scquence	
<220><223>	Gfi-1 binding sequence	
	67 agtc cg	12
<210><211><211><212>		
<213>	Artificial Sequence	
<220><223>	Gfi 1 binding sequence	
<400> gaaatc	gegg ge	12
<210><211><211><212><213>	69 12 DNA Artificial Sequence	

<220> •	Gfi-1 binding sequence	
<400>	69 cacg ct	12
<210><211><211><212><213>	12	
<220> <223>	Gfi-1 binding sequence	
<400> aaaatc	70 ggtg gt	12